

Appl. No. 10/798,008
Amdt. dated March 7, 2007
Reply to Office Action mailed September 7, 2006

REMARKS/ARGUMENTS

Claims 14-17, 19-24, 26-33 and 35-37 are pending. Claims 18, 25 and 34 have been cancelled without intending to dedicate any patentable subject matter to the public.

Claim Rejections Under 35 U.S.C. § 103

The Examiner has rejected **Claims 14-27 and 30-36 under 35 U.S.C. § 103(a)** as being obvious over U.S. Patent No. 5,939,124 (Wenger) and U.S. Patent No. 5,713,526 (Hauck) in view of:

U.S. Patent No. 5,713,526 (Martin)

U.S. Patent No. 3,899,607 (Miller)

U.S. Patent No. 6,270,820 (Fritz-Jung) and,

U.S. Patent No. 4,997,671 (Spanier).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

It is the Examiner's position that the processes of cleaning and dehulling the milo grain taught by Martin could be used prior to either of the extrusion processes taught by Wenger or Hauck, and that the post extrusion curing and re-working processes of Martin, Miller, Fritz-Jung and Spanier could be used on the extruded products formed. The Examiner submits that these combinations of references teach all the limitations of the amended claims and that the motivation for combining these references would be the removal of tannins present in the hulls of the milo berries that, with respect to some varieties of milo, impart a bitter taste, as stated in

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Martin at column 1, lines 34-35. Applicants respectfully traverse these rejections for the following reasons:

1) The extrusion process of Hauck teaches away from the currently claimed methods.

In the Amendment and Response filed June 8, 2006, Applicants amended the claims to recite the use of a de-fatted milo berry in the extrusion processing of the grain. The advantages of this de-fatting step and the use of a de-fatted milo feed are described at page 9, lines 9-19 of the instant specification.

Hauck teaches the use of an extrusion machine to produce an extruded pet food and the variation of the rotational speed and the temperature of the extruder to produce either a high- or low-density pet food. The extrusion machine of Hauck includes a third head and screw assembly to defat the extruded material by pressing the oil within the oil seed material through a passageway between adjacent bar elements (Hauck, Col. 20, lines 54-63). Thus, there would be no point in first defatting a milo grain feed prior to extrusion in the machinery of Hauck designed to de-fat and capture the oil from the extruded feed and there is no motivation or expectation of success in using the Hauck extrusion and de-fatting machinery to separate and recover oils from the grains in the currently claimed methods that require the use of a de-fatted milo feed.

2) Martin does not teach the step of defatting the milo grain.

Martin teaches a grain processing apparatus designed to efficiently remove the hull from milo berries. The hulls are partially removed in an “abrasion machine” and then passed to a scourer “to remove any remaining hull” (Martin, column 3, lines 7-15). Applicants previously noted that Martin does not teach de-fatting of the de-hulled milo berries (Amdt. & Resp. filed June 21, 2006, page 8). In response, the Examiner states that while Martin only discloses scouring to remove any remaining hull, the scouring described by Martin should have de-fatted the milo because “the scouring is the same and is conducted similarly, after de-hulling, and therefore must have resulted in the same de-fatting step” (Office Action mailed September 7, 2006, page 3). Applicants respectfully disagree with this assessment of Martin. While Martin

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does use the term “scouring” to generally describe the mechanical process applied to the partially de-hulled milo berries, the detailed description of the process does not teach or even suggest de-fatting the de-hulled milo.

The scouring apparatus of Martin allows entrance of milo berries into a first end and an outlet in a second end of the scouring chamber allows for their removal (Martin, column 4, lines 6-10). The apparatus contains an arrangement of wire bristles and brushes and, as the milo berries pass through the chamber, the wire bristles and brushes remove any remaining portions of the hull from the milo berries (Martin, column 4, lines 26-28). The pieces of hull are separated from the milo berries and pass through the perforations in a wall wherein any heavy pieces fall to the bottom of a housing (Martin, column 4, lines 30-32). A damper formed in a wall of the chamber introduces air which is pulled back through the chamber. This air provides a final wash of the milo berries before they are discharged through outlet (Martin, column 4, lines 42-45). Thus, the final product of this process is completely de-hulled and air-washed milo berries, but there is no teaching or suggestion of fracturing the berries to separate the fatty endogerm from the endosperm followed by a separation step capable of recovering the endosperm free of the fatty endogerm, i.e. there is no teaching or suggestion of de-fatting the de-hulled milo berries. Claims 14, 21 and 30 have been amended to incorporate the limitations of cancelled Claims 18, 25 and 34 to emphasize that “scouring,” in the context of the present invention, refers to de-fatting through the removal of the fatty endogerm from the grain. Therefore, the combination of the Martin and Wenger references does not disclose every limitation of Claims 14-17, 19-24, 26, 27, 30-33, 35 and 36 that require de-fatting of the milo berries by removal of the fatty endogerm, prior to extrusion.

The Examiner has also cited Fritz-Jung, Miller and Spanier as teaching post-extrusion curing and grinding, molding, baking or pellitizing of extruded products. None of these references overcomes the shortcomings of the Wenger and Martin references described above, namely that none of the cited references teaches the removal of the fatty endogerm prior to extrusion of the de-hulled milo.

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For the foregoing reasons, Applicants submit that the combinations of Wenger and Martin or Hauck and Martin do not render obvious the methods of Claims 14-17, 19-24, 26, 27, 30-33, 35 and 36, as amended, and respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn.

The Examiner has also rejected **Claims 28, 29 and 37 under 35 U.S.C. § 103(a)** as being obvious over Wenger and Hauck in view of: Martin, Miller, Fritz-Jung, Spanier, U.S. Patent No. 2,368,668 (Langford) and Chapter XII of Starch: Chemistry & Technology, second edition, Whistler et al. eds., 1984 (Watson).

The Examiner states that Wenger and Hauck teach the extrusion of grains including milo, corn, wheat, soy and oats including mixes of these grains with fish meal and vitamin premixes, while Martin teaches cleaning and decorticating milo and Watson and Langford teach recovering starch from grains. The Examiner argues that it would have been obvious to clean and decorticate milo as taught by Martin and then extrude the cleaned grain as taught by Wenger or Hauck. Additionally, the Examiner argues that additional starch could be added to the grain prior to extrusion as noted in Wenger (Col. 9, lines 30-65). The Examiner also states that the extraction of starch from grains is known as taught by Watson and Langford and therefore the starch to be added to a grain, prior to the extrusion taught by Wenger, could be a starch recovered from a grain such as milo.

What is missing from each of these references is the teaching or suggestion to extract the starch from the desired grain, mix that isolated starch with the desired additives and extrude that starch/additive mixture while discarding the remaining portions of the grain. Applicants submit that none of the cited references teaches this procedure of pending Claims 28, 29 and 37.

The citation in Wenger referred to by the Examiner (Col. 9, lines 30-65) describes one embodiment of the Wenger extruding apparatus invention in which a highly-cooked, dense food product is produced by extruding a grain mixture that includes “a relatively high grain content of at least about 60% by weight and more preferably at least about 80% by weight.” (see Col. 9,

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lines 29-31). The protein and starch content of this grain feed is tightly controlled to produce the denser, cooked food product of that embodiment. If the protein or starch content of that grain feed is not within the stated limits, Wenger teaches that the grain feed can be supplemented with an external source of protein and/or starch to supplement the grain and bring the protein and/or grain concentrations in the feed to within the stated limits prior to extrusion. Wenger also teaches that the external source of protein or starch, if needed, can be obtained from the list of grains recited as suitable feed by the Wenger disclosure.

This process taught by Wenger is fundamentally different from the process recited by pending Claims 28, 29 and 37. As opposed to supplementing a high content grain feed with a starch as taught by Wenger, the process of Claims 28, 29 and 37 requires isolating a starch from a grain, mixing that isolated starch with a feed additive, and extruding the isolated starch, in the absence of any grain. Thus, whereas Wenger teaches the extrusion of a heavy grain feed, the currently claimed invention requires the extrusion of a grain-free starch. Wenger does not teach the extrusion of a grain-free starch, but rather a relatively heavy grain feed with the possibility of a starch additive. Additionally, there is no suggestion in Wenger that any of the food products taught could be formed from a starch-only feed or a grain-free starch/additive mixture. Further, there is no suggestion or teaching in Wenger, Hauck, Martin, Watson or Langford that a purified starch could be successfully isolated and extruded to form a food product, and therefore, the prior art cited by the Examiner does not provide a reasonable expectation of successfully practicing the methods of Claims 28, 29 and 37. For these reasons, the combination of Wenger, Hauck, Martin, Miller, Fritz-Jung, Spanier, Langford and Watson does not teach or suggest every limitation of Claims 28, 29 and 37 that require extrusion of a starch-additive mixture wherein the starch is isolated from a grain or tuber, and Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) based on this combination of references be withdrawn.

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Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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